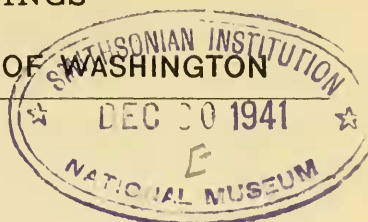


PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTONNEW *CLETHRIONOMYS* FROM UTAH AND
PENNSYLVANIA.

BY J. KENNETH DOUTT.

For several years the Carnegie Museum has been making a study of the mammals of the Uinta Basin and adjacent mountain ranges in northeastern Utah. Critical examination of some of this material has demonstrated the occurrence of an undescribed race of red-backed mice in the Uinta Mountains which may be known as follows:

Clethrionomys gapperi uintaensis, subsp. nov.

Type.—Adult male, skin and skull, no. 9436, Carnegie Museum; from Paradise Park, 10,050 feet, 45 miles by road northwest of Vernal, Uintah County, Utah; collected by J. Kenneth Douth; July 14, 1933; original number 1900.

Range.—Boreal Zone in the Uinta Mountains of northeastern Utah.

General characters.—Similar to *Clethrionomys gapperi galei* from Ward, Colorado, but head and cheeks grayer; sides and back paler; belly whiter. Distinguished from *Clethrionomys gapperi idahoensis* from Sawtooth City, Idaho, by yellowish rather than grayish sides; paler, more yellowish dorsum; backs of hind feet lighter; rump yellowish rather than grayish; belly whiter.

Color.—Type: Head, between eyes, Smoke Gray (Capitalized color terms from Ridgway, 1912), spot at base of vibrissae Blackish Brown. Center of back Auburn shading to Pinkish Buff on the sides. Belly white, darkened by the Blackish Slate underfur showing through. Tail above Clove Brown, below Olive Buff. Feet above Pale Drab-Gray.

Skull.—Type: Larger and heavier than *Clethrionomys gapperi galei*, with longer and heavier rostrum; braincase narrower; zygomatic arches less spreading anteriorly; anterior palatine slits longer; auditory bullae slightly larger. Similar in size and shape to *Clethrionomys gapperi idahoensis* but zygomatic arches slightly more spreading anteriorly; nasals slightly broader at the tip; auditory bullae slightly larger and more globular; diastema longer; anterior palatine slits longer. In most adult specimens of *uintaensis* the posterior extension of the premaxillae end even with the nasals while in *idahoensis* they project back beyond the nasals.

Measurements.—Type: Total length, 155 mm.; tail, 47; hind foot, 19; ear, 19; weight, 30 grams. Skull: Condylbasal length, 24.2; interorbital breadth, 4.1; zygomatic width, 13.2; anterior palatine slits, 4.6; height of skull at bullae, 9.4; alveolar length of upper tooth row, 5.6; diastema, 7.2; length of nasals, 7.4; width of nasals at tip, 3.2.

Averages and extremes of five adult male topotypes: Total length, 145.6 (140–153); tail, 39.8 (37–41); hind foot, 19.4 (19–20); ear, 15 (14–17); weight, 25.5 (23–30) grams. Skull, average of four: Condylbasal length, 24.96 (24.7–25.1); interorbital breadth, 4.05 (3.7–4.2); zygomatic width, 13.3 (13.1–13.4); length of anterior palatine slits, 5.07 (4.8–5.4); height of skull at bullae, 9.45 (9.0–9.8); alveolar length of upper tooth row, 5.52 (5.4–5.7); diastema, 7.5 (7.2–7.6); length of nasals, 7.27 (6.8–7.8); width of nasals at tip, 2.95 (2.7–3.1).

One adult female topotype: Total length, 148; tail, 40; hind foot, 20; ear, 18; weight, 38 grams. Skull: Condylbasal length, 24.1; interorbital breadth, 4.1; zygomatic width, 13.0; anterior palatine slits, 4.7; height of skull at bullae, 9.3; alveolar length of upper tooth row, 5.5; diastema, 7.2; length of nasals, 7.5; width of nasals at tip, 2.8.

Remarks.—This race is most similar in color to specimens of *Clethrionomys gapperi galei* from Ward, Colorado, but differs from them in slightly paler color and decidedly grayer head. The skull of *uintaensis* is larger, the nasals are longer and more expanded at the tip; the palatine slits are longer, and the rostrum viewed from above is longer and broader. From *idahoensis*, *uintaensis* is distinguished at once by the yellowish rather than gray sides and rump, and by the lighter, more yellowish color of the back.

Specimens examined.—Nine from the type locality and one from 15 miles north of Mountain Home, Duchesne County, Utah.

Examination of the red-backed mice occurring in Pennsylvania has shown that specimens from what was once Pymatuning Swamp (now Pymatuning Reservoir) also represent an undescribed race of *Clethrionomys* which may be known as follows:

***Clethrionomys gapperi paludicola*, subsp. nov.**

Type.—Adult male, skin and skeleton, no. 7634, Carnegie Museum; from Pymatuning Swamp, 1000 feet, 4 miles west of Linesville, Crawford County, Pennsylvania; collected by J. Kenneth Douth; April 11, 1932; original number 1080.

Range.—Known only from the vicinity of Pymatuning Reservoir.

General characters.—Similar to *Clethrionomys gapperi gapperi* from Parry Sound and Nipissing districts, Ontario, Canada, but back lighter, more golden, sides paler, belly more washed with buffy. Distinguished from *carolinensis* by much lighter, more yellowish, color of the back and sides; belly and underside of tail paler and more washed with buffy. Back and sides paler and more yellowish than *rhoadsii*, belly more buffy.

Color.—Type: Head between eyes Buffy Brown streaked with black, back between Mikado Brown and Snuff Brown; sides between Pinkish Buff and

Cinnamon Buff, darkened by the slaty bases of the underfur showing through; lateral line from chin to rump Pinkish Buff; belly Light Buff; tail above Clove Brown, below Light Drab; hind feet above Pallid Neutral Gray.

Skull.—Type: Larger and heavier than *Clethrionomys gapperi gapperi*; rostrum heavier; braincase wider; interorbital and zygomatic width greater. Distinguished from *Clethrionomys gapperi rhoadsi* by wider braincase and greater zygomatic width. Very similar to *Clethrionomys carolinensis*, but distinguished by greater zygomatic width, larger auditory bullae, and wider braincase.

Measurements.—Type: Total length, 149 mm.; tail, 44; hind foot, 19; ear, 15; weight, 30 grams. Skull: Condylbasal length, 24.6; interorbital breadth, 4.3; zygomatic width, 14.2; anterior palatine slits, 5.0; height of skull at bullae, 9.5; alveolar length of upper tooth row, 5.0; diastema, 7.5; length of nasals, 7.3; width of nasals at tip, 2.7; width of braincase, 11.7.

Averages and extremes of the type and ten adult male topotypes: Total length, 148.7 (145–153); tail, 40.8 (36–45); hind foot, 19.1 (18–20); ear, 14.36 (13–15); weight, 32.75 (30.0–38.5) grams. Skull, average of eleven: Condylbasal length, 24.76 (24.2–25.6); interorbital breadth, 4.1 (3.2–4.5); zygomatic width, 14.53 (13.9–15.0); anterior palatine slits, 4.89 (4.4–5.3); height of skull at bullae, 9.38 (8.9–10.0); alveolar length of upper tooth row, 5.26 (4.9–5.6); diastema, 7.36 (6.8–7.7); length of nasals, 7.42 (7.0–7.7); width of nasals at tip, 2.86 (2.6–3.2); breadth of braincase, 11.22 (10.4–11.7).

Averages and extremes of five adult female topotypes: Total length, 153 (149–160); tail, 43.2 (39–48); hind foot, 19.2 (19–20); ear, 15.2 (14–16); weight, 29.7 (21.0–33.6) grams. Skull, average of five: Condylbasal length, 24.58 (24.2–25.5); interorbital breadth, 4.04 (3.7–4.2); zygomatic width, 14.2 (13.8–14.7); anterior palatine slits, 4.7 (4.4–5.2); height of skull at bullae, 9.36 (9.0–9.7); alveolar length of upper tooth row, 5.3 (5.1–5.8); diastema, 7.36 (7.1–7.7); length of nasals, 7.36 (7.0–7.6); width of nasals at tip, 2.7 (2.4–3.0); breadth of braincase, 11.32 (11.0–11.6).

Remarks.—*Clethrionomys gapperi* is a widely distributed species in the northern part of its range, but towards the southern limit it becomes restricted to isolated bogs or mountain tops. In these latter situations it is cut off from other members of its kind. Each of these communities may develop distinctive characteristics and finally produce recognizable geographic races.

This new race seems to be well marked both by color and skull characters, although there is considerable variation in the series. In some, the buffy wash on the belly is very light, in others the lateral line is indistinct or lacking, and in others the hind feet are considerably darker. Even in the extremes of variation, however, there are few specimens which approach *Clethrionomys carolinensis*, *Clethrionomys gapperi gapperi* or *Clethrionomys gapperi rhoadsi* in color.

Merriam (1888) described *Clethrionomys carolinensis* as a full species, but until recently I have felt that it should be considered a subspecies of

gapperi. However, the present study has suggested that *gapperi* and *carolinensis* may be distinct species with ranges which overlap in parts of Pennsylvania, West Virginia and Maryland. The characters which separate the two species are not well marked, but the skulls of *carolinensis* are distinctly broader. The infra-orbital shield flares out abruptly and the skulls are wider across the zygomatic arches. Two complete skulls and a broken one from the type locality of *carolinensis*, one specimen from ten miles southwest of Pearisburg, Giles County, Virginia, and six specimens from Garrett County, Maryland, two miles east of Cranesville (West Virginia), are all very similar in skull characters to the Pymatuning series. Specimens from Kane, McKean County; Cresson, Cambria County; near Meyersdale, Somerset County, Pennsylvania; and near Cheat Bridge Post Office, Randolph County, West Virginia, are all similar in this respect to specimens of *Clethrionomys gapperi gapperi* from Parry Sound and Nipissing districts, Ontario. This seems to be explained most simply by assuming that two species are found in the area, one ranging from Canada southward at least to Randolph County, West Virginia, and the other ranging from North Carolina northward to Crawford County, Pennsylvania. Unfortunately the material now available is not sufficient to demonstrate whether or not this assumption is correct, so I have described this new race as a subspecies of *gapperi*. If further study should show that *carolinensis* is a good species, this new race should then be considered a subspecies of it.

Specimens examined.—Sixty-one from the vicinity of Pymatuning Swamp, Crawford County, Pennsylvania.

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